What is claimed is:

1. A rod lens (3) with a surface that has at least one optically active area (6) and, on its radial periphery, at least one optically inactive area (7, 8), wherein on at least one axial end segment the lens has at least one smooth surface section (3) and in the axially center segment of the lens is not smooth.

2. A bone-shaped rod lens (3) with a surface that has at least one optically active area (6) and, on its radial periphery, at least one optically inactive area (7, 9), and where axially external segments (3') of the rod lens have a greater diameter than the inner segment of the rod lens (3), wherein the optically inactive area on the peripheral surface with greater diameter has at least one segment with at least one smooth surface section (7, 8), whereas it is not smooth in the inner segment (3") of the lens.

3. A rod lens as in either of the foregoing claims, wherein the non-smooth segment (3") is a rough-ground surface area.

4. A rod lens as in any one of the foregoing claims, wherein the at least one smooth surface section (7, 8) is a surface of the lens that is exposed to mechanical impacts.

5. A rod lens as in any one of the foregoing claims, wherein on the end segment of the lens, between the optically active area (6) and the radial peripheral surface, a facet (8) is configured, which has at least one smooth surface area.

6. A rod lens as in any one of the foregoing claims, wherein the at least one smooth surface section (3') has a reflecting surface or is polished.

7. A rod lens as in claim 6, wherein the at least one smooth surface section (3') is polished according to ISO Norm Class P1 or more finely.

8. A method for producing a rod lens with a surface that has at least one optically active area (6) and, on its radial periphery, at least one optically inactive area (7, 8), wherein at least one surface section (3') of the optically inactive surface is smoothed on at least one axial end segment of the lens.

9. A method for producing a bone-shaped rod lens (3) with a surface that has at least one optically active area (6) and, on its radial periphery, at least one optically inactive area (7, 8), with the axial end segments of the rod lens having a greater diameter than the inner segment of the rod lens, wherein at least one surface section (3') of the optically inactive area is smoothed on at least one peripheral surface that is of greater diameter.

10. A method as in either of claims 8 or 9, wherein the at least one surface section (3', 8) is polished.

11. A method as in claim 10, wherein the polishing is performed with a polishing agent carrier on a pitch base, laminated fabric base, polyurethane sheet base, felt base, synthetics base, and/or cast resin base and with a polishing agent that includes a metal oxide or diamond.

12. A method as in any one of claims 8 to 11, wherein the method is a polishing by means of high-speed grinding.

13. A method as in either of claims 8 or 9, wherein the at least one surface section is warmed up to the softening temperature.

14. A method as in claim 13, wherein the warming is accomplished by means of a rubbing-rotating motion.

15. A method as in claim 14, wherein the rubbing-rotating motion is a rubbing-rotating motion similar to the high-speed grinding.

16. A method as in claim 13, wherein the warming is accomplished by treatment using laser radiation.

17. A method as in any one of claims 13 to 16, wherein during that process the surface temperature is at least 500 degrees C.

18. A method as in any one of claims 8 to 17, wherein a facet (8) is smoothed.

19. A method as in claim 18, wherein the facet is produced by means of the smoothing.

20. A rod lens system (2) that has at least one rod lens (3) as in any one of claims 1 to 7.

21. An endoscope (1) with a rod lens system (2) as in claim 20.